DBMS Project Questions And Queries

DDL with Constraints

Q1.Create a table login with columns id as primary key, username as not null , password and privilege.

```
SQL> create table login (id int primary key, username varchar(20) not null, password
varchar(20) not null, privilege varchar(20) not null);

Table created.
```

Q2.Create a table book_details with id from login as forein key , author ,title etc as columns.

```
SQL> create table book_details (id int references login(id), title varchar(20) not null , author
varchar(20) not null, year_of_publishing varchar(20) not null );

Table created.
```

Q3.Alter table book details and change column title capacity from 20 to 50 .

```
SQL> alter table book_details modify title varchar(50);

Table altered.
```

Q4.Delete table book_details .

```
SQL> drop table book_details;

Table dropped.
```

Q5.Again create a table book_details with id from login as forein key ,bookid as primary key, author ,title etc as columns .

```
SQL> create table book_details (id int references login(id),bookid int primary key , title
varchar(20) not null , author varchar(20) not null, year_of_publishing varchar(20) not null );

Table created.
```

DML and Functions

Q1.Select all the results form table login which have privileges as Admin from table login .

```
SQL> select * from login where Privilege ='Admin';

        ID USERNAME            PASSWORD            PRIVILEGE
---------- -------------------- -------------------- --------------------
         1 Priyanshu            12345               Admin
         2 Nitin                12345               Admin

SQL>
```

Q2.Select all the results from table book_price where issue price is equal to 100 rupees .

Run SQL Command Line

```
SQL> select * from book_price where issue_price=100;

    BOOKID      PRICE ISSUE_PRICE
---------- ---------- -----------
       101       1200         100
       102       1500         100
       103       1000         100

SQL>
```

Q3.Select only Author name from table book details where bookid is 104 and title is Let us C++.

```
SQL> select author from book_details where bookid=104 ;

AUTHOR
--------------------
Yashavant Kanetkar

SQL> select author from book_details where title like 'Let Us C++' ;

AUTHOR
--------------------
Yashavant Kanetkar

SQL>
```

Q4.Select user names from table login where name starts from letter ‘S’ .

```
SQL> select * from login where username like 'S%';

       ID USERNAME             PASSWORD             PRIVILEGE
---------- -------------------- -------------------- --------------------
        3 Saaransh             12345                Student
        4 Sumit                12345                Student
        7 Sidhu                12345                Faculty
        8 Sanchit              12345                Faculty

SQL>
```

Q5.Select all usernames in lower case letters from table login.

Q6.Select all usernames with first letter capital from table login.

SET Operations

Q1. Show id and bookid combined for table book_details and book_isssue and also delete duplicates.(Union)

Run SQL Command Line

```
SQL> select id , bookid  from book_details union select id ,bookid from book_issue ;

        ID     BOOKID
---------- ----------
         1        101
         2        102
         2        103
         4        106
         5        104
         6        105
         7        107

7 rows selected.

SQL>
```

Q2. Show id and bookid combined for table book_details and book_isssue without deleting duplicates.(Union ALL)

Select Run SQL Command Line

```
SQL> select id , bookid  from book_details union all select id ,bookid from book_issue ;

        ID     BOOKID
---------- ----------
         1        101
         2        102
         2        103
         5        104
         6        105
         4        106
         7        107
         1        101
         2        102
         5        104
         6        105

        ID     BOOKID
---------- ----------
         7        107

12 rows selected.

SQL>
```

Q3. Show id and bookid for table book_details minus book_issue.

Run SQL Command Line

```
12 rows selected.

SQL> select id , bookid  from book_details minus select id ,bookid from book_issue ;

        ID     BOOKID
---------- ----------
         2        103
         4        106

SQL>
```

Q4. Q1. Show id and bookid intersecting for table book_details and book_isssue .

Run SQL Command Line

```
SQL> select id , bookid  from book_details intersect select id ,bookid from book_issue ;

        ID     BOOKID
---------- ----------
         1        101
         2        102
         5        104
         6        105
         7        107

SQL>
```

Aggregation

Q1.Select the most costly and least costly book from table book price and also show the sum of all prices .

Select Run SQL Command Line

```
SQL> select max(price),min(price),sum(price) from book_price ;

MAX(PRICE) MIN(PRICE) SUM(PRICE)
---------- ---------- ----------
      3500        800      11100

SQL>
```

Q2. Select the average price of books from table book price .

```
SQL> select avg(price) from book_price;

AVG(PRICE)
----------
1585.71429

SQL>
```

Q3. Count all the books present in the library .

```
SQL> select count(bookid) from book_details ;

COUNT(BOOKID)
-------------
            7

SQL>
```

Q4. Calculate sum off prices of all books in the library.

Run SQL Command Line

```
SQL> select sum(price) from book_price;

SUM(PRICE)
----------
     11100
```

Q5. Select minimum issue price for a book.

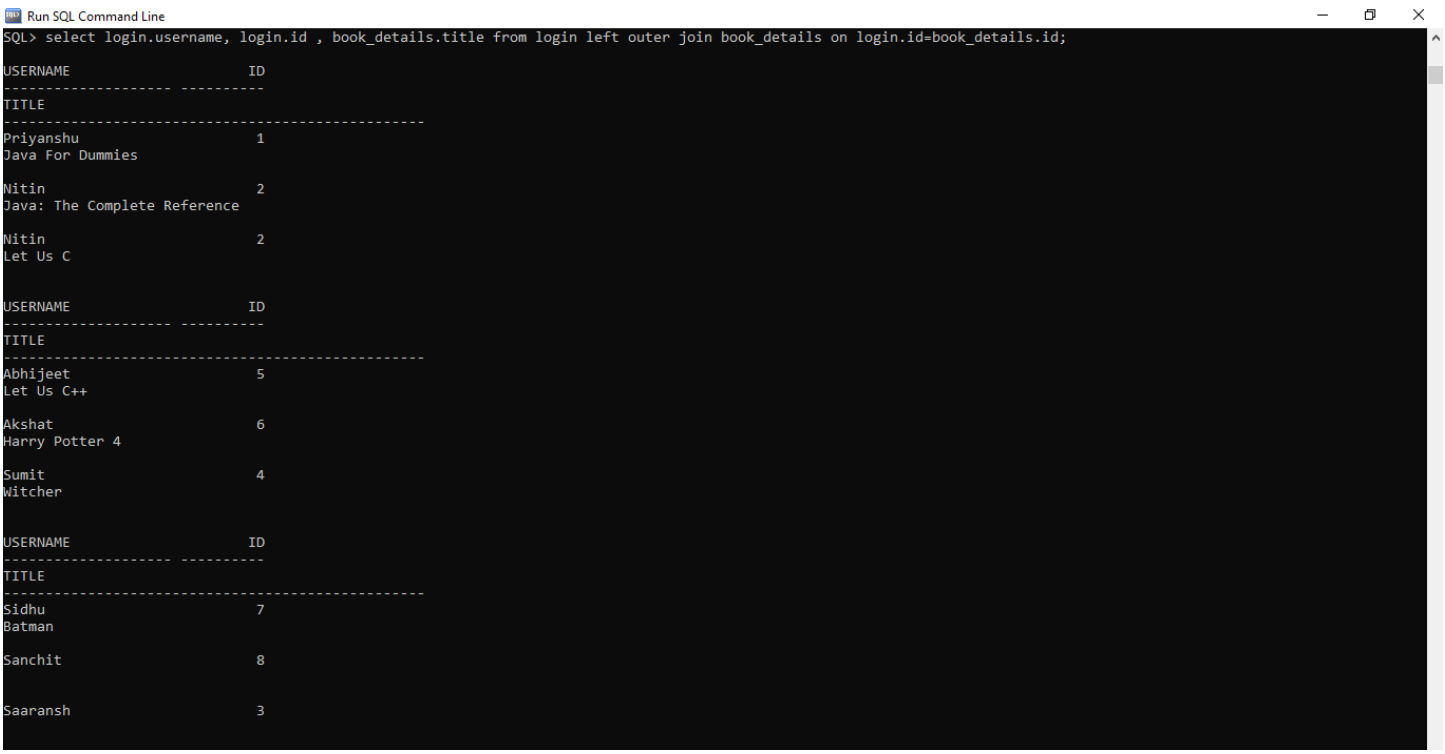
```
SQL> select min(issue_price) from book_price;

MIN(ISSUE_PRICE)
----------------
              86
```

Joins

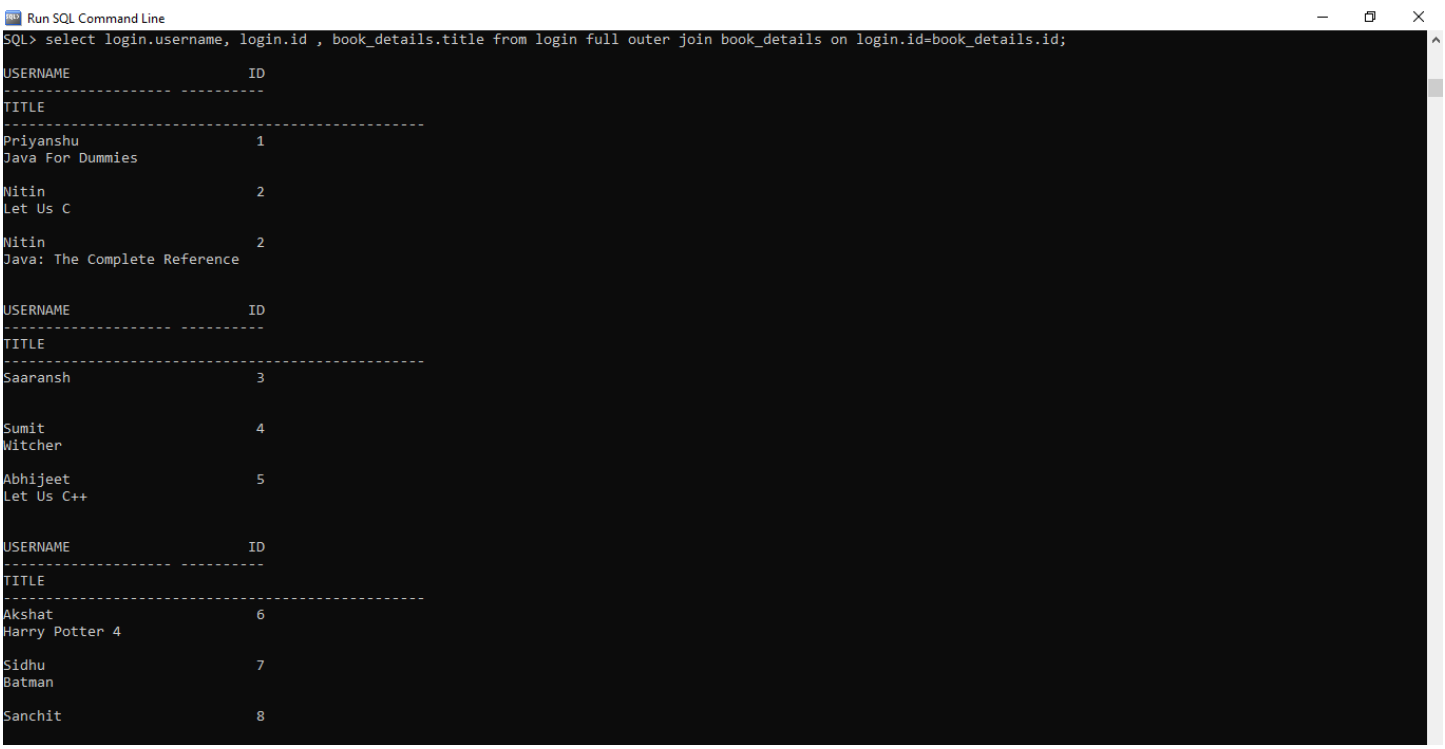
Q1.Select usernames,id,title from tables login and book details which belong to both tables (Inner Join).

```
Run SQL Command Line
SQL> select login.username, login.id , book_details.title from login inner join book_details on login.id=book_details.id;

USERNAME                   ID
-------------------- ----------
TITLE
--------------------------------------------------
Priyanshu                   1
Java For Dummies

Nitin                       2
Let Us C

Nitin                       2
Java: The Complete Reference


USERNAME                   ID
-------------------- ----------
TITLE
--------------------------------------------------
Sumit                       4
Witcher

Abhijeet                    5
Let Us C++

Akshat                      6
Harry Potter 4


USERNAME                   ID
-------------------- ----------
TITLE
--------------------------------------------------
Sidhu                       7
Batman


7 rows selected.

SQL>
```

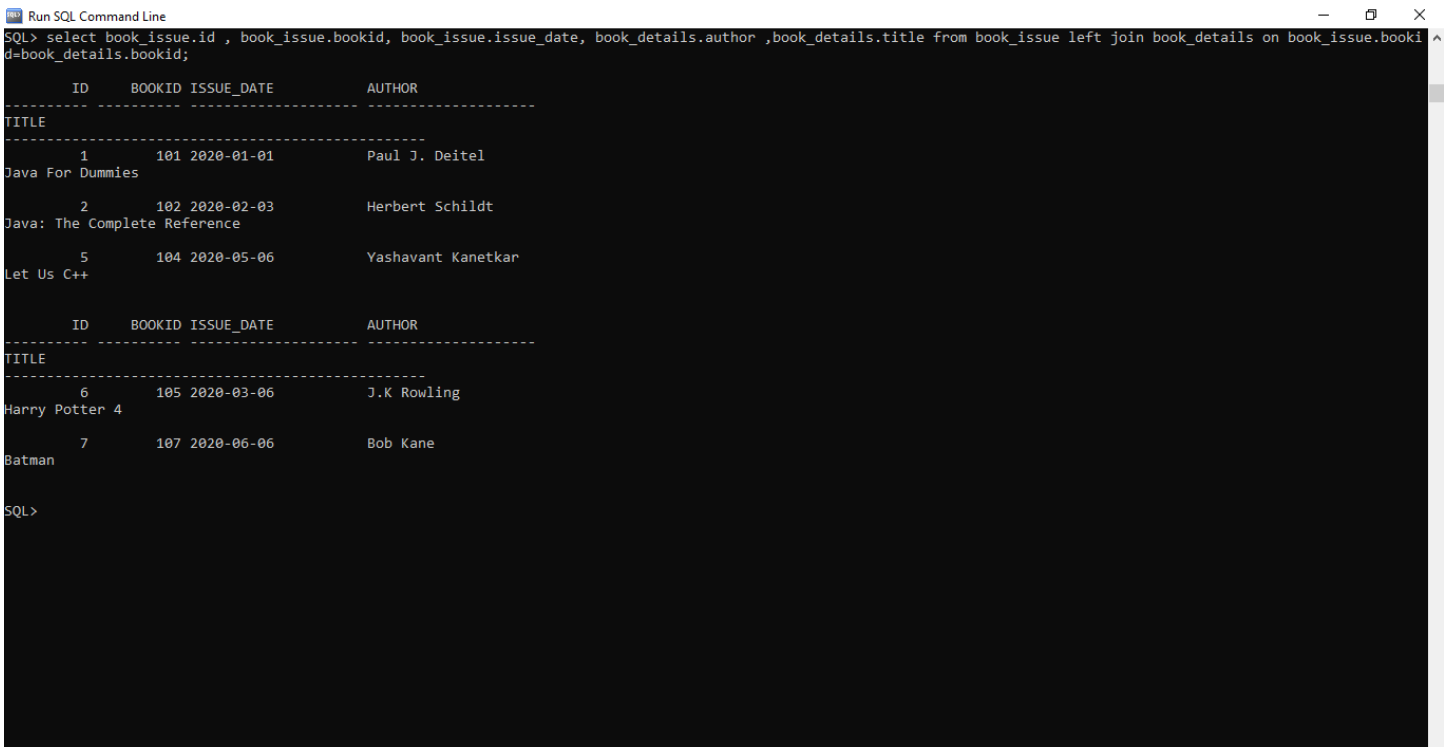
Q2.Select usernames,id,title from tables login and book details but show only data which is in the login table and is also related to the book details table (Left Join).



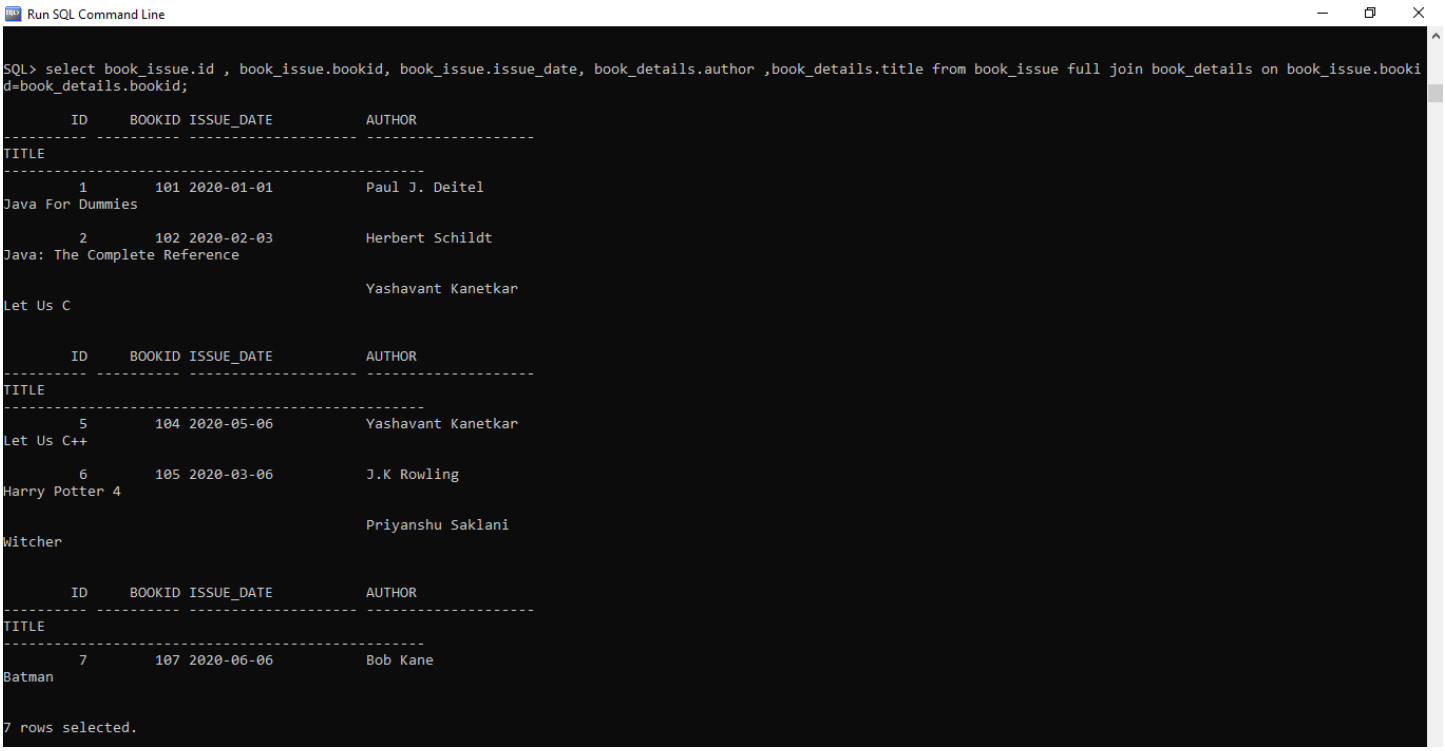
Q3. Select all data of usernames,id,title from tables login and book details (Full Join).



Q4.Select id,bookid,issue date, author and title data from tables book_issue and book_details in which above mentioned data belongs to issue table and is also related to other table (Left Join)

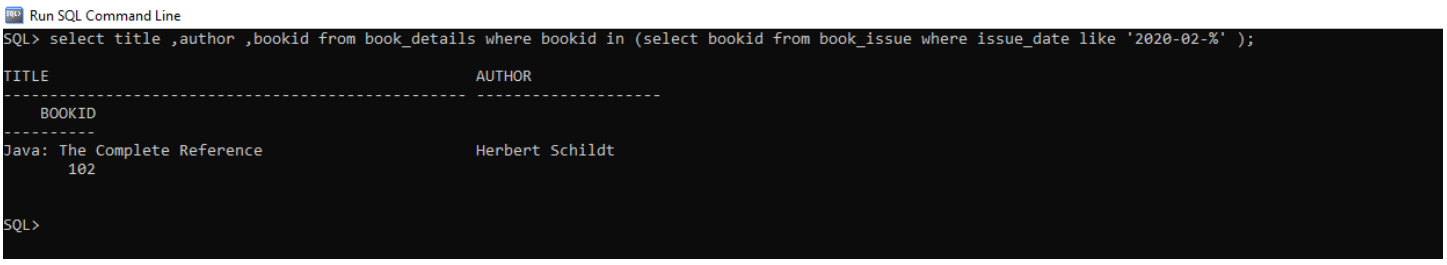


Q5.Select all data of id,bookid,issue date, author and title data from tables book_issue and book_details (Full Join)



Sub Queries

Q1.Select title author and bookid of the books which have their issue date of the month June 2020.



Q2.Select id and username which are situated to book id 104 or more .

Run SQL Command Line

```
         7 Sidhu

SQL> select id ,username from login where id in (select id from book_details where bookid >=104);

        ID USERNAME
---------- --------------------
         5 Abhijeet
         6 Akshat
         4 Sumit
         7 Sidhu

SQL>
SQL>
```

Q3. Select everything from table book_price where book price is greater than average book price.

Run SQL Command Line

```
SQL> select * from book_price where price >(select avg(price) from book_price);

    BOOKID      PRICE ISSUE_PRICE
---------- ---------- -----------
       105       2000         150
       107       3500         300

SQL>
```

Q4.Select everything from table book_price where book price is greater than 1000 rupees.

Run SQL Command Line

```
SQL> select * from book_price where price in (select price from book_price where price >1000 );

    BOOKID      PRICE ISSUE_PRICE
---------- ---------- -----------
       101       1200         100
       102       1500         100
       105       2000         150
       106       1100         131
       107       3500         300

SQL>
```

Q5.Select id ,author, bookid, title and year of publishing where issue price is lesser than 120.

PL/SQL

Q1. Adding two numbers using function in pl/sql.

```
create or replace function adder(n1 in number, n2 in number)
return number
is
n3 number(8);
begin
n3 :=n1+n2;
return n3;
end;
```

Q2 Find max of 3 numbers using function in pl/sql.

```
DECLARE
a number;
b number;
c number;
d number;
FUNCTION findMax(x IN number, y IN number, k in number)
RETURN number
IS
```

```
z number;
BEGIN
IF x > y THEN
if x>l then
z:=x;
ELSE if
y>x then
if y>k then
z:=k;
Else if
k>x then
if k>y then
z:=k;
END IF;
RETURN z;
```

Q3.Find total number of users in the database.

```
CREATE OR REPLACE FUNCTION totaluser
RETURN number IS
   total number(2) := 0;
BEGIN
   SELECT count(*) into total
   FROM emp;

   RETURN total;
END;
/
------------------------------------------------------------
DECLARE
   c number(2);
BEGIN
   c := totaluser();
   dbms_output.put_line('Total number  of user: ' || c);
END;
```

Q4, Compare maximum price of any two books.

```
.DECLARE
   a number;
   b number;
   c number;
FUNCTION findMax(x IN number, y IN number)
RETURN number
IS
```

```
   z number;
BEGIN
  IF x > y THEN
    z:= x;
  ELSE
    z:= y;
  END IF;
  RETURN z;
END;
BEGIN
  a:= 1500;
  b:= 1200;
  c := findMax(a, b);
  dbms_output.put_line(' Maximum of (23,45): ' || c);
END;
/
```